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Technical Note N-615

POLAR STRUCTURES -

SPECIFICATIONS AND OUTFITTING FOR A
HEAVY-EQUIPMENT FIELD REPAIR SHELTER

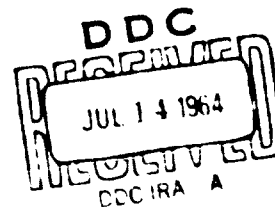
BY

G. E. Sherwood

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U. S. NAVAL CIVIL ENGINEERING LABORATORY
Port Hueneme, California



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POLAR STRUCTURES -

SPECIFICATIONS AND OUTFITTING FOR A
HEAVY-EQUIPMENT FIELD REPAIR SHELTER

Y-F015-11-01-105

Type B

by

G. E. Sherwood

ABSTRACT

A heavy-equipment field repair shelter was developed to satisfy the requirement of shelter for maintenance and repair of construction equipment up to Size 6 snow tractors in remote work centers at established polar stations. The shelter is constructed of steel arch ribs with a canvas cover. The basic shelter is 28 by 44 feet with a 12-by 28-foot shop at one end. An expansion unit can be added to the shop end to form a second repair stall. Outfitting for the shelter includes a 4-ton traveling hoist, an electrical harness, an overhead forced-air heater, shop equipment and tools.

This technical note contains the specifications and outfitting for the shelter described in Naval Civil Engineering Laboratory Technical Note N-614, "Polar Structures - Conceptual Design for a Heavy-Equipment Field Repair Shelter."

Qualified requesters may obtain copies of this note from DDC

INTRODUCTION

Experience with field repair shelters in polar regions has shown that large shelters are needed for the repair and maintenance of heavy construction equipment (up to Size 6 snow tractors) commonly used in remote work centers near coastal stations. Limited portability is desirable due to the transient nature of many polar work projects. This technical note contains the specifications for the heavy-equipment field repair shelter developed to satisfy this requirement and outfitting for the shop which is a part of the shelter. Standard specifications referenced in the text are listed in Appendix A.

The shelter is described in Laboratory Technical Note N-614, "Polar Structures - Conceptual Design for a Heavy-Equipment Field Repair Shelter."

SPECIFICATIONS

The heavy-equipment field repair shelter is a canvas-covered, arch-rib structure mounted on skids for limited portability. The frame is steel; the cover is a single thickness of coated nylon. The basic shelter is 28 by 44 feet and is 16 feet high at the haunch of the arch. It has a 28- by 32-foot repair stall and a 28- by 12-foot shop. Eight-foot expansion units can be added to the shop end of the shelter to form a second repair stall. Two-foot-wide skids provide tracks for a traveling hoist, permitting both longitudinal and lateral positioning. A plywood door panel in the side of the shelter is used for personnel entry into the shop area. An electrical harness provides general lighting and outlets. An oil-fired, forced-air heater is mounted overhead in the shop area. This location prevents the heater vents from interfering with movement of the traveling hoist.

The heavy-equipment field repair shelter is detailed in the drawings presented in Appendix B.

1. Scope. The work shall include the furnishing of all material and equipment, and performing all labor for the complete fabrication of the items indicated on the drawings and described and specified herein. The contractor's proposal shall be based on the drawings and

specifications herewith and no deviations shall be accepted except as approved in writing by Contracting Officer.

2. Materials

A. Plywood

(1) For Personnel Entry. Plywood for personnel entry shall conform to Specification HN-P-530a, and shall be grade-marked to indicate conformance with the following requirements:

Douglas Fir, Exterior Type, Grade AC, sanded 2 sides, as per Commercial Standard CS-45 of latest date.

(2) For Shop Floor. Plywood for shop floor shall be 2-4-1 Douglas Fir Plywood, 1-1/8 inches thick, with exterior glue and T&G edges as indicated. All panels shall be stamped with the grade-mark of the Douglas Fir Plywood Association.

B. Steel

(1) Sheet or Strip. Conform to Specification QQ-S-640 FS-102C unless noted otherwise.

(2) Bar Stock. Conform to Specification QQ-S-633a.

(3) Structural. Conform to "Standard Specifications for Structural Steel for Bridges and Buildings," serial designation A-36 of the American Society for Testing Materials.

C. Cloth

(1) For Cover. Conform to Specification MIL-C-43006. Gray color. (Herculite No. 80 as manufactured by Herculite Protective Fabrics, Newark 3, New Jersey, conforms to this specification.)

D. Fastenings

(1) Nails. The nails shall be steel, cement-coated, either standard (coolers) or countersunk head (sinters) and size as indicated on the drawings, and shall conform to Specification FF-N-105.

(2) Screws.

(a) Wood. Wood screws shall be steel, of the size indicated on the drawings and of style 2c (flat (countersink) head with

cross recess drive) and shall conform to Specification FF-S-111b. Wood screws shall be used only where length requirements are in excess of two (2) inches.

(b) Screws, threaded full length. All screws screwing wood to wood or other materials to wood and where the length requirement is not in excess of two (2) inches shall be a type of screw that is threaded full length. These screws shall be cadmium plated with cross recess-drive and head-type as indicated on the drawings. Type A, Parker Kalon, cadmium-plated screws with Phillips slot conforms to these requirements.

(3) Bolts, Nuts, Washers.

(a) Bolts and nuts, hexagonal. Conform to Specification FF-B-571a, Type B1 and Table V, and nuts Type A1 and Table XII.

(b) Washers. The washers shall be standard commercial cut steel of the type and size indicated on the drawings.

(c) Finishes. All bolts, nuts and washers shall be finished with a zinc coating conforming to Type II or III, Class 2 of Specification QQ-Z-325a or a cadmium plating Type II or III, Class 2 of Specification QQ-P-416a.

(4) Harness Snaps. Standard commercial, steel with square eye, 1 inch, and spring guard cadmium or zinc plated, 3 inch +/- 1/8 inch long.

(5) D-Rings. Standard commercial, steel bright finish, heavy pattern, size as indicated.

(6) Cotter Pins. Conform to Specification FF-P-386b, Type B.

(7) Adhesive A - Wood to Wood. The adhesive used for adhering wood to wood (other than the manufacture of plywood) shall conform to Type I, Grade A, Class 1 of Specification MIL-A-197b.

E. Rope

(1) Conform to Specification T-R 605, Type M, Class 1.

F. Straps

(1) Webbing, Cotton. The webbing for straps shall conform

to Specification MIL-W-530B and shall be Type III, Class 4 of width indicated on the drawings.

(2) Clips, End. The end clips on webbing straps shall be brass, black chemical finish conforming to Type I, (ball type) of Specification JAN-C-496.

(3) Buckles, Slide, With Hook. The buckles shall be made of steel, hot-rolled sheet or strip, condition optional as indicated on the drawings. The buckle shall be heat treated to a hardness of RC-16-22 and shall be free from cracks, scale, and other injurious defects. Case hardening will not be permitted. The buckles shall be given a finish consisting of a phosphate-treated zinc plate, conforming to Class 3, Type III of Specification QQ-Z-325, followed by bake enameling. The enamel shall conform to Type II, Specification JAN-E-480, in a black color. The coatings shall level out to a uniform dry film thickness of 0.25 mils minimum without objectionable orange peel, wrinkles, drops, streaks, or areas of thin or no film.

G. Coating

(1) Galvanizing. Conform to Specification QQ-Z-325a, Type II, Class I zinc coating.

(2) Cadmium Plating. Conform to Specification QQ-P-416a, Class I, Type II.

H. Paint

(1) Primer. The primer shall conform to Specification TT-P-636b.

(2) Enamel. The enamel shall conform to Specification TT-E-529a, Class A. The color shall be No. 24087, Table VI of Standard FED-STD-595.

I. Hardware

(1) Hinges. All hinges shall conform to Specification FF-H-116c, 2-inch Continuous Type 2175F.

(2) Latch and Keeper. Latch and keeper for doors shall be a type easily operated from either inside or outside of the door. Latch and keeper shall be substantially the type indicated on the drawings, easily operated by a person wearing polar-type mittens, but any

acceptable latch that meets the necessary requirements may be used upon the approval of the Contracting Officer. (The Vonnegut No. 25 latch, as manufactured by Vonnegut Hardware Co., Indianapolis, Indiana, meets the requirements of this specification.)

J. Electrical

(1) Materials. Materials listed below shall conform to the specifications as noted:

<u>Materials</u>	<u>Specification</u>
(a) <u>Wire connectors</u>	W-S-610
Types I, Class B & A, Style 3 or 4, Type II, Class A.	
(b) <u>Fittings, cable and conduit</u>	W-F-406a
Type I, Class 1, Style A; Type I, Class 3, Style A; Type V, Class 1, Style A.	
<u>Fittings, electric</u>	
Metallic tubing, Type I, Class B, Item 12.	
(c) <u>Outlet boxes</u>	W-J-800a
Type I, Size A, Style 1; Type I, Size C, Style 8; Type II, Size 8, Style 10; Type II, Size E, Style 13; Type II, Size G, Style 18;	

Materials

Specification

Type IV, Size K,
Style 20;
Type VIII, Size S,
Style 43;
Type VIII, Size S,
Style 44;
Type VIII, Size U,
Style 52; 54; 56; 57; 58;
Type VIII, Size S,
Style 49.

W-J-800a

(d) Panelboards

W-P-131a(2)

Class A-1, A-2, and
A-4 as indicated on
drawings and conform
to Table III.

(e) Receptacles and plugs

W-C-596

Style, Series D except
with pressure-type
terminals.

(f) Conduit, steel,
flexible

W-C-566a

Sizes as indicated.

(g) Conduit, steel,
rigid

WW-C-581c

Sizes as indicated.

(h) Nipples

WW-N-351a

Type I, sizes as
indicated.

(2) Conductors.

(a) Building conductors. Conductors in buildings
shall be copper, of size indicated, color coded; insulation to be of
a type to withstand bending at -50 F without damage.

(b) Overhead conductors. Overhead distribution conductors shall be aluminum of size indicated; insulation to be of a type to withstand bending at -50 F without damage.

(3) Lighting Fixtures. Conform to Specification 9Yh.

(4) Hardware, Electrical Equipment Mounting.

(a) Spring clip mounting brackets. (Enrico Products, Inc., Cleveland, Ohio, "GAT" No. 12-m-2-4.)

(b) Spring clip conduit hanger. (Enrico Products, Inc., Cleveland, Ohio, "GAT" No. 12-m-2-4.)

(c) Spring clip support bracket with hook. (Enrico Products, Inc., Cleveland, Ohio, "GAT" No. 2-FMP-28 with 2-CH-16 hook.)

(5) Fixture Hook. 1/2-inch N.P.T. with cable passage. (Crouse Hinds Co., Syracuse, New York, No. 1NH16 conforms to this specification.)

(6) Outlet Box Cover, Aligner. (Benjamin Electric Manufacturing Company, Des Plaines, Illinois, No. 3385 conforms to this specification.)

3. Fabrication

A. Shelter

(1) Frame. The steel framing shall be A-36 steel and fabrication shall conform to American Institute of Steel Construction Specifications. Welding shall be by electric-arc process by qualified and certified welders using approved and proper electrodes in accordance with ASTM-A233 and AWS specifications. Wood nailers on floor beams and floor struts shall be installed by the fabricator after all members are painted. All steel members, after fabrication and welding, and all wood members before installation, shall receive one coat of primer and two coats of enamel. Cleaning of steel before painting shall be in accordance with Specification MIL-T-704C, Type A.

(2) Cover. The cover shall be fabricated of coated nylon in accordance with the details. Color shall be gray both sides of white inside and gray outside. Thread shall be Dacron and stitching shall conform to Federal Standard 751, Type 301. Where reinforcing is indicated, it shall be a double thickness of the cloth in addition

to the base cloth. The patch shall be securely stitched to prevent tear-out and all cut edges shall be turned under and stitched. All stitching shall be sealed with clear liquid vinyl.

B. Standard Outfitting

(1) Electrical. The electrical assemblies shall be fabricated in accordance with the details. Each of the items shall be complete and ready for field assembly.

(2) Side Entry. The side entry panel shall be fabricated of Douglas Fir Plywood. It is designed so that the door may swing in or out as desired. Where floor occurs, the door must swing out. All contact surfaces between wood and wood shall be glued with Adhesive A and secured with screws as indicated. After fabrication and before assembly, all surfaces except those in contact, shall receive one coat of primer and two coats of enamel.

C. Shop Floor

(1) Floor Panels. The plywood floor panels shall be standard 4 by 8 foot by 1-1/8 inch as indicated on the drawings. No fabrication is required. All surfaces, including edges, of plywood panels shall receive one coat of primer and two coats of enamel.

OUTFITTING

The 12- by 28-foot shop is located at one end of the basic heavy-equipment field repair shelter. The shop floor made of 1-1/8-inch tongue and groove plywood supported on steel I beams is designed to support 150 psi. An electric harness is included in the standard outfitting for the shelter. The 4-ton traveling hoist can be used in the shop as well as in the repair stalls.

<u>Item</u>	<u>Quantity</u>	<u>Source</u>
<u>Fixed Shop Equipment</u>		
Heater, oil-fired, forced-air, horizontal, output range 280,000 to 392,000 Btuh	1	Commercial
Workbench, cabinet-type 72" x 28" x 32"	2	Commercial
Storage bins, eight-compartment 81-1/2" x 30-1/2" x 18-3/4"	2	Federal Stock
Vice, machinist	1	Commercial
Grinder, heavy-duty, pedestal-mounted, electric-drive, with adjustable eye shields; one coarse and one medium wheel, 1/3-hp motor, 110-volt, 60-cycle, single-phase	1	Commercial
Compressor, air, portable, electric drive, single-phase, 3.1 cfm at 150#, 20-gal tank, automatic no-load start, automatic cut-on and cut-off, 1-hp motor, 110-volt, 60-cycle, single-phase	1	Commercial
Lubricating unit, power-operated	1	Federal Stock
Valve grinder	1	Federal Stock

<u>Item</u>	<u>Quantity</u>	<u>Source</u>
Torch outfit, cutting and welding, oxygen gauge, acetylene gauge, 50-ft dual hose, cutting tips #101-0-1-2-3, welding tips - 0-1-2-3-4-5-6-7-8-9, cutting goggles fling lighter	1	Commercial
Truck, hand, two-wheeled, for welding cylinders	1	Federal Stock
Tool chest, mechanic, seven-drawer	1	Commercial
Tool chest, heavy-duty, seven-drawer	1	Commercial
Cabinet, tool, four-drawer, with casters	1	Commercial
Cart, tool, two-shelf, four-drawer, with casters, 24" x 18" x 34"	1	Commercial
<u>Portable Shop Equipment</u>		
Grease gun, hand, lever-operated	1	Federal Stock
Gun, fluid, direct-delivery	1	Federal Stock
Oiler, hand, forced-feed	1	Federal Stock
Clamps, "C",		
2" x 1-3/4" throat	1	Federal Stock
4" x 2-1/4" throat	1	Federal Stock
6" x 2-3/4" throat	1	Federal Stock
Wrench, impact, electric	1	Commercial
Jack, hydraulic, 10-ton	1	Commercial
Jack, hydraulic, 5-ton	2	Commercial
Bar, pinch, 5'	1	Federal Stock
Bar, wrecking, 18"	1	Federal Stock

<u>Item</u>	<u>Quantity</u>	<u>Source</u>
Caliper, inside, spring-joint, 6"	1	Federal Stock
Caliper, outside, spring-joint, 6"	1	Federal Stock
Compressor, piston ring	1	Federal Stock
Dividers, mechanic, steel	1	Federal Stock
Stone, sharpening, mounted	1	Federal Stock
Tool kit, carpenter, w/chest	1	Commercial
Blow torch, gasoline, 1-pt cap	1	Federal Stock
Carrier, storage battery	1	Federal Stock
Tachometer, mechanical, continuous	1	Federal Stock
Hammer, hand, sledge, double-faced, 8-lb	1	Federal Stock
Drill, electric, portable, 3/4" hand-style 6, w/stand	1	Federal Stock
Tool kit, diesel injector repair	1	Federal Stock
Brazing alloy, silver, 6-oz	1	Federal Stock
Flux, brazing, silver, 8-oz	1	Federal Stock
Cleaner set, welding and cutting tips	1	Federal Stock
Cutter, pipe, 2" to 3/8"	1	Federal Stock
Threading set, pipe, RHT	1	Federal Stock
Wrench, pipe, 6"	1	Federal Stock
Wrench, pipe, 8"	1	Federal Stock

<u>Item</u>	<u>Quantity</u>	<u>Source</u>
Wrench, pipe, 10"	2	Federal Stock
Wrench, pipe, 14"	2	Federal Stock
Shears, metal-cutting, LH, 10"	1	Federal Stock
Shears, metal-cutting, RH, 10"	1	Federal Stock
Shears, metal-cutting, straight, 10"	1	Federal Stock
Puller kit, mechanical, w/case	1	Federal Stock
Face shield for grinder, 8" visor	1	Commercial
Dresser, abrasive wheel, hand	1	Federal Stock
Cutter, bolt, 1/2" capacity	1	Federal Stock
Cutter, tube, 1/8" to 1-1/8" OD w/deburring tool	1	Federal Stock
Blowgun, airline	1	Commercial
Engine cylinder compression gauge	1	Commercial

Hand Tools

Hammer, hand, sledge, double-faced, 4-lb	1	Federal Stock
Drill, electric, portable, 1/4", hand-style	1	Federal Stock
Drill, electric, portable, 1/2", hand-style 6, w/stand	1	Federal Stock
Brush, wire, carbon-cleaning, for 1/4" drill	2	Federal Stock
Arbor, hole saw, #1	1	Federal Stock
Arbor, hole saw, #2	1	Federal Stock

<u>Item</u>	<u>Quantity</u>	<u>Source</u>
Arbor, hole saw, #3	1	Federal Stock
Blade, hole saw, 5/8"	1	Federal Stock
Blade, hole saw, 3/4"	1	Federal Stock
Blade, hole saw, 7/8"	1	Federal Stock
Blade, hole saw, 1"	1	Federal Stock
Blade, hole saw, 1-1/16"	1	Federal Stock
Blade, hole saw, 1-1/8"	1	Federal Stock
Blade, hole saw, 1-1/4"	1	Federal Stock
Blade, hole saw, 1-3/8"	1	Federal Stock
Blade, hole saw, 1-1/2"	1	Federal Stock
Blade, hole saw, 1-5/8"	1	Federal Stock
Blade, hole saw, 1-3/4"	1	Federal Stock
Blade, hole saw, 1-7/8"	1	Federal Stock
Blade, hole saw, 2"	1	Federal Stock
Threading set, screw, RHT, N.F. 1/4" to 1"	1	Federal Stock
Threading set, screw, RHT, N.C. 3-48 to 12-24	1	Federal Stock
Square, combination, grooved- type, 12"	1	Federal Stock
Caliper set, micrometer, outside and inside 0-5"	1	Federal Stock
Restorer set, thread	1	Federal Stock
Chaser set, thread, internal 4-24 thd/inch	1	Federal Stock

<u>Item</u>	<u>Quantity</u>	<u>Source</u>
Soldering gun, electric	1	Federal Stock
Tip, electric soldering gun (box)	1	Federal Stock
Soldering iron, electric, 5/8", pyramid-point	1	Federal Stock
Soldering iron, electric, pencil-type	1	Federal Stock
Wrench, torque, 1/2" drive, 5-75 ft-lb	1	Federal Stock
Wrench, torque, 1/2" drive, 5-250 ft-lb	1	Federal Stock
Battery booster cable	1	Commercial
Timing light with spare bulb	1	Commercial
Extractor set, screw	1	Federal Stock
Valve spring compressor, C-clamp type, adjustable	1	Federal Stock
Wrench, open-end, adjustable, 24"	1	Commercial
Hole cutter, adjustable	1	Commercial

<u>Item</u>	<u>Quantity</u>		<u>Source</u>
	<u>Heavy Duty Tool Box</u>	<u>Standard Tool Box</u>	
Socket wrench set, 1/4" sq drive, consisting of:			
Handle, spinner		1	Federal Stock
Socket, regular 8-point, 1/4"		1	Federal Stock
Socket, regular 8-point, 5/16"		1	Federal Stock
Socket, regular 8-point, 3/8"		1	Federal Stock
Socket, regular 6-point, 3/16"		1	Federal Stock
Socket, regular 6-point, 7/32"		1	Federal Stock
Socket, regular 6-point, 1/4"		1	Federal Stock
Socket, regular 6-point, 9/32"		1	Federal Stock
Socket, regular 6-point, 5/16"		1	Federal Stock
Socket, regular 6-point, 11/32"		1	Federal Stock
Socket, regular 6-point, 3/8"		1	Federal Stock
Socket, regular 6-point, 7/16"		1	Federal Stock
Socket, regular 6-point, 1/2"		1	Federal Stock
Adapter, 1/4" female drive to 3/8" male drive		1	Federal Stock
Socket wrench set, 3/8" sq drive, consisting of:			
Handle, ratchet	1	1	Federal Stock
Handle, speeder	1	1	Federal Stock
Handle, sliding tee	1	1	Federal Stock

<u>Item</u>	<u>Quantity</u>		<u>Source</u>
	<u>Heavy Duty Tool Box</u>	<u>Standard Tool Box</u>	
Handle, nut spinner	1	1	Federal Stock
Handle, plastic	1	1	Federal Stock
Handle, flexible extension	1	1	Commercial
Ratchet, spinner	1	1	Commercial
Ratchet, adapter	1	1	Federal Stock
Extension bar, 1-1/2"	1	1	Federal Stock
Extension bar, 6"	1	1	Federal Stock
Extension bar, 12"	1	1	Federal Stock
Universal joint	1	1	Federal Stock
Adapter, 3/8" female drive to 1/4" male drive		1	Federal Stock
Adapter, 3/8" female drive to 1/2" male drive		1	Federal Stock
Socket wrench set, 3/8" sq drive, consisting of:			
Socket, regular 8-point, 1/4"	1	1	Federal Stock
Socket, regular 8-point, 5/16"	1	1	Federal Stock
Socket, regular 8-point, 3/8"	1	1	Federal Stock
Socket, regular 8-point, 7/16"	1	1	Federal Stock
Socket, regular 8-point, 1/2"	1	1	Commercial
Socket, regular 6-point, 1/4"	1	1	Commercial
Socket, regular 6-point, 5/16"	1	1	Commercial

<u>Item</u>	<u>Quantity</u>		<u>Source</u>
	<u>Heavy Duty Tool Box</u>	<u>Standard Tool Box</u>	
Socket, regular 12-point, 3/8"	1	1	Federal Stock
Socket, regular 12-point, 7/16"	1	1	Federal Stock
Socket, regular 12-point, 1/2"	1	1	Federal Stock
Socket, regular 12-point, 9/16"	1	1	Federal Stock
Socket, regular 12-point, 19/32"	1	1	Federal Stock
Socket, regular 12-point, 5/8"	1	1	Federal Stock
Socket, regular 12-point, 11/16"	1	1	Federal Stock
Socket, regular 12-point, 3/4"	1	1	Federal Stock
Socket, regular 12-point, 13/16"	1	1	Federal Stock
Socket, regular 12-point, 7/8"	1	1	Federal Stock
Socket, deep, 12-point, 3/8"	1	1	Federal Stock
Socket, deep, 12-point, 7/16"	1	1	Federal Stock
Socket, deep, 12-point, 1/2"	1	1	Federal Stock
Socket, deep, 12-point, 9/16"	1	1	Federal Stock
Socket, deep, 12-point, 19/32"	1	1	Federal Stock
Socket, deep, 12-point, 5/8"	1	1	Federal Stock
Socket, deep, 12-point 11/16"	1	1	Federal Stock
Socket, deep, 12-point, 3/4"	1	1	Federal Stock
Socket, deep, 12-point, 13/16"	1	1	Federal Stock
Socket, deep, 12-point, 7/8"	1	1	Federal Stock
Socket, deep, 12-point, 15/16"	1	1	Federal Stock

<u>Item</u>	<u>Quantity</u>		<u>Source</u>
	<u>Heavy Duty</u> <u>Tool Box</u>	<u>Standard</u> <u>Tool Box</u>	
Socket, deep, 12-point, 1"	1	1	Federal Stock
Socket, flexible, regular 6-point, 3/8"	1	1	Federal Stock
Socket, flexible, regular 6-point, 7/16"	1	1	Federal Stock
Socket, flexible, regular 6-point, 1/2"	1	1	Federal Stock
Socket, flexible, regular 6-point, 5/8"	1	1	Federal Stock
Socket, flexible, regular 6-point, 11/16"	1	1	Federal Stock
Socket, flexible, regular 6-point, 3/4"	1	1	Federal Stock
Socket, flexible, regular 6-point, 7/8"	1	1	Federal Stock
Socket wrench set, 1/2" sq drive, consisting of:			
Handle, flex, 18"	1	1	Commercial
Handle, sliding tee	1	1	Federal Stock
Handle, speeder, 19"	1	1	Federal Stock
Handle, ratchet, 10"	1	1	Federal Stock
Handle, ratchet, 15"	1	1	Federal Stock
Ratchet, spinner	1		Commercial
Ratchet, adapter	1	1	Federal Stock
Universal joint	1	1	Federal Stock

<u>Item</u>	<u>Quantity</u>		<u>Source</u>
	<u>Heavy Duty</u> <u>Tool Box</u>	<u>Standard</u> <u>Tool Box</u>	
Bar, extension, 2"	1	1	Federal Stock
Bar, extension, 3-1/2"	1	1	Federal Stock
Bar, extension, 5"	1	1	Federal Stock
Bar, extension, 10"	1	1	Federal Stock
Drag link adjuster	1		Federal Stock
Stud remover	1		Commercial
Adapter, 1/2" female drive to 3/8" male drive		1	Federal Stock
Adapter, 1/2" female drive to 3/4" male drive		1	Federal Stock
Socket, regular, 8-point, 3/8"	1	1	Federal Stock
Socket, regular, 8-point, 7/16"	1	1	Federal Stock
Socket, regular, 8-point, 1/2"	1	1	Federal Stock
Socket, regular, 8-point, 9/16"	1	1	Federal Stock
Socket, regular, 8-point, 5/8"	1		Federal Stock
Socket, regular, 8-point, 11/16"	1		Federal Stock
Socket, regular, 8-point, 3/4"	1		Federal Stock
Socket, regular, 8-point, 13/16"	1		Federal Stock
Socket, regular, 8-point, 7/8"	1		Federal Stock
Socket, regular, 8-point, 15/16"	1		Federal Stock
Socket, regular, 8-point, 1"	1		Federal Stock
Socket, regular, 6-point, 7/16"	1		Commercial

<u>Item</u>	<u>Quantity</u>		<u>Source</u>
	<u>Heavy Duty</u>	<u>Standard</u>	
	<u>Tool Box</u>	<u>Tool Box</u>	
Socket, regular, 6-point, 1/2"	1		Commercial
Socket, regular, 6-point, 9/16"	1		Commercial
Socket, regular, 6-point, 5/8"	1		Commercial
Socket, regular, 6-point, 11/16"	1		Commercial
Socket, regular, 6-point, 3/4"	1		Commercial
Socket, regular, 6-point, 13/16"	1		Commercial
Socket, regular, 6-point, 7/8"	1		Commercial
Socket, regular, 6-point, 15/16"	1		Commercial
Socket, regular, 6-point, 1"	1		Commercial
Socket, regular, 6-point, 1-1/16"	1		Commercial
Socket, regular, 12-point, 3/8"	1	1	Federal Stock
Socket, regular, 12-point, 7/16"	1	1	Federal Stock
Socket, regular, 12-point, 1/2"	1	1	Federal Stock
Socket, regular, 12-point, 9/16"	1	1	Federal Stock
Socket, regular, 12-point, 19/32"	1	1	Federal Stock
Socket, regular, 12-point, 5/8"	1	1	Federal Stock
Socket, regular, 12-point, 11/16"	1	1	Federal Stock
Socket, regular, 12-point, 3/4"	1	1	Federal Stock
Socket, regular, 12-point, 25/32"	1	1	Federal Stock
Socket, regular, 12-point, 13/16"	1	1	Federal Stock
Socket, regular, 12-point, 7/8"	1	1	Federal Stock
Socket, regular, 12-point, 29/32"	1	1	Federal Stock

<u>Item</u>	<u>Quantity</u>		<u>Source</u>
	<u>Heavy Duty</u> <u>Tool Box</u>	<u>Standard</u> <u>Tool Box</u>	
Socket, regular, 12-point, 15/16"	1	1	Federal Stock
Socket, regular, 12-point, 1"	1	1	Federal Stock
Socket, regular, 12-point, 1-1/16"	1	1	Federal Stock
Socket, regular, 12-point, 1-1/8"	1	1	Federal Stock
Socket, regular, 12-point, 1-3/16"	1	1	Federal Stock
Socket, regular, 12-point, 1-1/4"	1	1	Federal Stock
Socket, regular, 12-point, 1-5/16"	1		Commercial
Socket, deep, 6-point, 1/2"	1		Commercial
Socket, deep, 6-point, 9/16"	1		Commercial
Socket, deep, 6-point, 5/8"	1		Commercial
Socket, deep, 6-point, 11/16"	1		Commercial
Socket, deep, 6-point, 3/4"	1		Commercial
Socket, deep, 6-point, 13/16"	1		Commercial
Socket, deep, 6-point, 7/8"	1		Commercial
Socket, deep, 6-point, 1"	1		Commercial
Socket, deep, 12-point, 1/2"	1		Commercial
Socket, deep, 12-point, 9/16"	1		Commercial
Socket, deep, 12-point, 5/8"	1		Commercial
Socket, deep, 12-point, 11/16"	1		Commercial
Socket, deep, 12-point, 3/4"	1		Commercial
Socket, deep, 12-point, 13/16"	1		Federal Stock

<u>Item</u>	<u>Quantity</u>		<u>Source</u>
	<u>Heavy Duty</u>	<u>Standard</u>	
	<u>Tool Box</u>	<u>Tool Box</u>	
Socket, deep, 12-point, 7/8"	1		Federal Stock
Socket, deep, 12-point, 15/16"	1		Federal Stock
Socket, deep, 12-point, 1"	1		Federal Stock
Socket, deep, 12-point, 1-1/16"	1		Federal Stock
Socket, deep, 12-point, 1-1/8"	1		Federal Stock
Socket, flexible, 6-point, 9/16"	1		Commercial
Socket, flexible, 6-point, 5/8"	1		Commercial
Socket, flexible, 6-point, 11/16"	1		Commercial
Socket, flexible, 6-point, 3/4"	1		Commercial
Socket, flexible, 6-point, 13/16"	1		Commercial
Socket, flexible, 6-point, 7/8"	1		Commercial
Socket wrench set, 3/4" sq drive, consisting of:			
Handle, ratchet	1		Federal Stock
Handle, flex	1		Federal Stock
Sliding tee head	1		Federal Stock
Ratchet, adapter	1		Federal Stock
Bar, extension, 3"	1		Federal Stock
Bar, extension, 6"	1		Federal Stock
Bar, extension, 16"	1		Federal Stock
Adapter, 3/4" female drive to 1/2" male drive	1		Federal Stock

<u>Item</u>	<u>Quantity</u>		<u>Source</u>
	<u>Heavy Duty</u>	<u>Standard</u>	
	<u>Tool Box</u>	<u>Tool Box</u>	
Socket, regular, 12-point, 15/16"	1		Federal Stock
Socket, regular, 12-point, 31/32"	1		Federal Stock
Socket, regular, 12-point, 1"	1		Federal Stock
Socket, regular, 12-point, 1-1/16"	1		Federal Stock
Socket, regular, 12-point, 1-1/8"	1		Federal Stock
Socket, regular, 12-point, 1-3/16"	1		Federal Stock
Socket, regular, 12-point, 1-1/4"	1		Federal Stock
Socket, regular, 12-point, 1-5/16"	1		Federal Stock
Socket, regular, 12-point, 1-3/8"	1		Federal Stock
Socket, regular, 12-point, 1-7/16"	1		Federal Stock
Socket, regular, 12-point, 1-1/2"	1		Federal Stock
Socket, regular, 12-point, 1-9/16"	1		Federal Stock
Socket, regular, 12-point, 1-5/8"	1		Federal Stock
Socket, regular, 12-point, 1-11/16"	1		Federal Stock
Socket, regular, 12-point, 1-3/4"	1		Federal Stock
Socket, regular, 12-point, 1-13/16"	1		Federal Stock
Socket, regular, 12-point, 1-7/8"	1		Federal Stock
Socket, regular, 12-point, 2"	1		Federal Stock
Wrench, box, double offset, long, 12-point, 3/8" & 7/16"	1	1	Federal Stock
Wrench, box, double offset, long, 12-point, 7/16" & 1/2"	1		Federal Stock

<u>Item</u>	<u>Quantity</u>		<u>Source</u>
	<u>Heavy Duty</u> <u>Tool Box</u>	<u>Standard</u> <u>Tool Box</u>	
Wrench, box, double offset, long, 12-point, 1/2" & 9/16"	1	1	Federal Stock
Wrench, box, double offset, long, 12-point, 9/16" & 5/8"	1		Federal Stock
Wrench, box, double offset, long, 12-point, 19/32" & 11/16"	1	1	Federal Stock
Wrench, box, double offset, long, 12-point, 5/8" & 11/16"	1		Federal Stock
Wrench, box, double offset, long, 12-point, 5/8" & 3/4"	1	1	Federal Stock
Wrench, box, double offset, long, 12-point, 11/16" & 13/16"	1		Federal Stock
Wrench, box, double offset, long, 12-point, 3/4" & 7/8"	1	1	Federal Stock
Wrench, box, double offset, long, 12-point, 25/32" & 13/16"	1	1	Federal Stock
Wrench, box, double offset, long, 12-point, 7/8" & 15/16"	1	1	Federal Stock
Wrench, box, double offset, long, 12-point, 15/16" & 1"	1		Federal Stock
Wrench, box, double offset, long, 12-point, 1" & 1-1/8"	1	1	Federal Stock
Wrench, box, double offset, long, 12-point, 1-1/16" & 1-1/8"	1		Federal Stock
Wrench, box, double offset, long, 12-point, 1-1/16" & 1-1/4"	1	1	Federal Stock
Wrench, box, double offset, long, 12-point, 1-3/16" & 1-5/16"	1		Federal Stock

<u>Item</u>	<u>Quantity</u>		<u>Source</u>
	<u>Heavy Duty</u>	<u>Standard</u>	
	<u>Tool Box</u>	<u>Tool Box</u>	
Wrench, box, double offset, long 12-point, 1-1/4" & 1-3/8"	1		Federal Stock
Wrench, box, double offset, long, 12-point, 1-3/8" & 1-1/2"	1		Federal Stock
Wrench, box, double offset, long, 12-point, 1-7/16" & 1-3/8"	1		Federal Stock
Wrench, box, double offset, short, 12-point, 5/16" & 3/8"	1		Federal Stock
Wrench, box, double offset, short, 12-point, 3/8" & 7/16"	1		Federal Stock
Wrench, box, double offset, short, 12-point, 7/16" & 1/2"	1		Federal Stock
Wrench, box, double offset, short, 12-point, 1/2" & 9/16"	1		Federal Stock
Wrench, box, double offset, short, 12-point, 9/16" & 5/8"	1		Federal Stock
Wrench, box, double offset, short, 12-point, 5/8" & 3/4"	1		Federal Stock
Wrench, box, double offset, short, 12-point, 11/16" & 13/16"	1		Federal Stock
Wrench, box and open end combina- tion, long handle, 12-point, 3/8"	1	1	Federal Stock
Wrench, box and open end combina- tion, long handle, 12-point, 7/16"	1	1	Federal Stock
Wrench, box and open end combina- tion, long handle, 12-point, 1/2"	1	1	Federal Stock
Wrench, box and open end combina- tion, long handle, 12-point, 9/16"	1	1	Federal Stock

<u>Item</u>	<u>Quantity</u>		<u>Source</u>
	<u>Heavy Duty</u> <u>Tool Box</u>	<u>Standard</u> <u>Tool Box</u>	
Wrench, box and open end combination, long handle, 12-point, 5/8"	1	1	Federal Stock
Wrench, box and open end combination, long handle, 12-point, 11/16"	1	1	Federal Stock
Wrench, box and open end combination, long handle, 12-point, 3/4"	1	1	Federal Stock
Wrench, box and open end combination, long handle, 12-point, 13/16"	1	1	Federal Stock
Wrench, box and open end combination, long handle, 12-point, 7/8"	1	1	Federal Stock
Wrench, box and open end combination, long handle, 12-point, 15/16"	1	1	Federal Stock
Wrench, box and open end combination, long handle, 12-point, 1"	1	1	Federal Stock
Wrench, open-end, double offset, short handle, 11/64" & 15/64"		1	Federal Stock
Wrench, open-end, double offset, short handle, 15/64" & 13/64"		1	Federal Stock
Wrench, open-end, double offset, short handle, 7/32" & 1/4"		1	Federal Stock
Wrench, open-end, double offset, short handle, 9/32" & 5/16"		1	Federal Stock
Wrench, open-end, double offset, short handle, 15/16" & 9/32"		1	Federal Stock
Wrench, open-end, double offset, short handle, 11/32" & 3/8"		1	Federal Stock
Wrench, open-end, double offset, short handle, 3/8" & 11/32"		1	Federal Stock

<u>Item</u>	<u>Quantity</u>		<u>Source</u>
	<u>Heavy Duty</u> <u>Tool Box</u>	<u>Standard</u> <u>Tool Box</u>	
Wrench, open-end, double offset, long handle, 1/4" & 5/16"	1	1	Federal Stock
Wrench, open-end, double offset, long handle, 5/16" & 3/8"	1	1	Federal Stock
Wrench, open-end, double offset, long handle, 3/8" & 7/16"	1	1	Federal Stock
Wrench, open-end, double offset, long handle, 7/16" & 1/2"	1	1	Federal Stock
Wrench, open-end, double offset, long handle, 1/2" & 9/16"	1	1	Federal Stock
Wrench, open-end, double offset, long handle, 9/16" & 5/8"	1	1	Federal Stock
Wrench, open-end, double offset, long handle, 19/32" & 11/16"	1	1	Federal Stock
Wrench, open-end, double offset, long handle, 5/8" & 11/16"	1	1	Federal Stock
Wrench, open-end, double offset, long handle, 5/8" & 3/4"	1	1	Federal Stock
Wrench, open-end, double offset, long handle, 11/16" & 3/4"	1	1	Federal Stock
Wrench, open-end, double offset, long handle, 3/4" & 7/8"	1	1	Federal Stock
Wrench, open-end, double offset, long handle, 25/32" & 13/16"	1	1	Federal Stock
Wrench, open-end, double offset, long handle, 7/8" & 15/16"	1	1	Federal Stock
Wrench, open-end, double offset, long handle, 15/16" & 1"	1	1	Federal Stock

<u>Item</u>	<u>Quantity</u>		<u>Source</u>
	<u>Heavy Duty</u>	<u>Standard</u>	
	<u>Tool Box</u>	<u>Tool Box</u>	
Wrench, open-end, double offset, long handle, 1" & 1-1/8"	1		Federal Stock
Wrench, open-end, double offset, long handle, 1" & 1-1/16"	1		Federal Stock
Wrench, open-end, double offset, long handle, 1-1/16" & 1-1/4"	1	1	Federal Stock
Wrench, open-end, double offset, long handle, 1-3/16" & 1-5/16"	1		Federal Stock
Wrench, open-end, double offset, long handle, 1-1/16" & 1-3/8"	1		Federal Stock
Wrench, open-end, double offset, long handle, 1-3/8" & 1-1/2"	1		Federal Stock
Wrench, open-end, double offset, long handle, 1-7/16" & 1-5/8"	1		Federal Stock
Wrench, open-end, adjustable, 4"	1	1	Federal Stock
Wrench, open-end, adjustable, 6"	1	1	Federal Stock
Wrench, open-end, adjustable, 8"	1	1	Federal Stock
Wrench, open-end, adjustable, 10"	1	1	Federal Stock
Wrench, open-end, adjustable, 12"	1	1	Federal Stock
Wrench, open-end, adjustable, 15"	1		Federal Stock
Pliers, battery terminal, 7"	1	1	Federal Stock
Pliers, combination, utility, 8"	1		Federal Stock
Pliers, diagonal cutting, short nose	1		Federal Stock
Pliers, diagonal cutting, 4"	1	1	Federal Stock

<u>Item</u>	<u>Quantity</u>		<u>Source</u>
	<u>Heavy Duty</u> <u>Tool Box</u>	<u>Standard</u> <u>Tool Box</u>	
Pliers, diagonal cutting, 6"	1	1	Federal Stock
Pliers, gas, 6"	1	1	Federal Stock
Pliers, ignition		1	Federal Stock
Pliers, gripping, 7-1/2"		1	Federal Stock
Pliers, long, round nose, 6"	1	1	Federal Stock
Pliers, needle nose, with side cutter		1	Federal Stock
Pliers, slip joint, angle nose, 5"	1	1	Federal Stock
Pliers, slip joint, angle nose, 8"	1	1	Federal Stock
Pliers, slip joint, angle nose, 10"	1		Federal Stock
Pliers, vice grip, 7"	1	1	Federal Stock
Pliers, vice grip, 10"	1		Federal Stock
Screwdrivers, flat tip, plastic handle, 1/8" x 3"	1	1	Federal Stock
Screwdriver, flat tip, plastic handle, 1/4" x 1-1/2"	1	1	Federal Stock
Screwdriver, flat tip, plastic handle, 3/16" x 2-1/2"	1	1	Federal Stock
Screwdriver, flat tip, plastic handle, 1/4" x 4"	1	1	Federal Stock
Screwdriver, flat tip, plastic handle, 5/16" x 6"	1	1	Federal Stock
Screwdriver, flat tip, plastic handle, 3/8" x 8"	1	1	Federal Stock
Screwdriver, flat tip, plastic handle, 7/16" x 8"	1	1	Federal Stock

<u>Item</u>	<u>Quantity</u>		<u>Source</u>
	<u>Heavy Duty</u>	<u>Standard</u>	
	<u>Tool Box</u>	<u>Tool Box</u>	
Screwdriver, Phillips-head, plastic handle, #1 - 3/16" x 1"	1	1	Federal Stock
Screwdriver, Phillips-head, plastic handle, #2 - 1/4" x 1-1/2"	1	1	Federal Stock
Screwdriver, Phillips-head, plastic handle, #1 - 3/16" x 3"	1	1	Federal Stock
Screwdriver, Phillips-head, plastic handle, #2 - 1/4" x 4"	1	1	Federal Stock
Screwdriver, Phillips-head, plastic handle, #3 - 5/16" x 6"	1	1	Federal Stock
Screwdriver, Phillips-head, plastic handle, #4 - 3/8" x 8"	1	1	Federal Stock
Screwdriver, offset, Phillips-head, #1 & 2	1	1	Federal Stock
Screwdriver, offset, Phillips-head, #2 & 3	1	1	Federal Stock
Screwdriver, offset, Phillips-head, #3 & 4	1	1	Federal Stock
Screwdriver, spark tester, flat blade, 5-1/8"	1	1	Federal Stock
Hammer, hand, ball peen, 4-oz	1	1	Federal Stock
Hammer, hand, ball peen, 12-oz	1	1	Federal Stock
Hammer, hand, ball peen, 32-oz	1		Federal Stock
Hammer, hand, plastic head	1	1	Federal Stock
Punch, drive pin, straight type, 1/16"		1	Federal Stock
Punch, drive pin, straight type, 3/32"		1	Federal Stock

<u>Item</u>	<u>Quantity</u>		<u>Source</u>
	<u>Heavy Duty</u> <u>Tool Box</u>	<u>Standard</u> <u>Tool Box</u>	
Punch, drive pin, straight type, 1/8"		1	Federal Stock
Punch, drive pin, straight type, 5/32"	1	1	Federal Stock
Punch, drive pin, straight type, 3/16"	1	1	Federal Stock
Punch, drive pin, straight type, 7/32"	1	1	Federal Stock
Punch, drive pin, straight type, 1/4"	1	1	Federal Stock
Punch, drive pin, straight type, 5/16"	1	1	Federal Stock
Punch, drive pin, straight type, 3/8"	1	1	Federal Stock
Punch, drive pin, tapered, 1/16"		1	Federal Stock
Punch, drive pin, tapered, 1/8"		1	Federal Stock
Punch, drive pin, tapered, 3/16"	1	1	Federal Stock
Punch, drive pin, tapered, 1/4"	1	1	Federal Stock
Punch, drive pin, tapered, 5/16"	1	1	Federal Stock
Punch, center, solid, 1/8" x 4"	1	1	Federal Stock
File, hand, flat, 6"	1	1	Federal Stock
File, hand, flat, 8"	1	1	Federal Stock
File, hand, flat, 10"	1	1	Federal Stock
File, hand, flat, 12"	1	1	Federal Stock
File, hand, round, 6"	1	1	Federal Stock

<u>Item</u>	<u>Quantity</u>		<u>Source</u>
	<u>Heavy Duty</u> <u>Tool Box</u>	<u>Standard</u> <u>Tool Box</u>	
File, hand, round, 8"	1	1	Federal Stock
File, hand, round, 10"	1	1	Federal Stock
File, hand, round, 12"	1	1	Federal Stock
Handles, file, wood, 1" x 4"	1	1	Federal Stock
Handles, file, wood, 1-1/4" x 4-1/2"	1	1	Federal Stock
Key, socket head screw, hex drive, .050"		1	Federal Stock
Key, socket head screw, hex drive, 1/16"		1	Federal Stock
Key, socket head screw hex drive, 5/64"		1	Federal Stock
Key, socket head screw, hex drive, 3/32"	1	1	Federal Stock
Key, socket head screw, hex drive, 1/8"	1	1	Federal Stock
Key, socket head screw, hex drive, 5/32"	1	1	Federal Stock
Key, socket head screw, hex drive, 3/16"	1	1	Federal Stock
Key, socket head screw, hex drive, 7/32"	1	1	Federal Stock
Key, socket head screw, hex drive, 1/4"	1	1	Federal Stock
Key, socket head screw, hex drive, 5/16"	1	1	Federal Stock
Key, socket head screw, hex drive, 3/8"	1	1	Federal Stock

<u>Item</u>	<u>Quantity</u>		<u>Source</u>
	<u>Heavy Duty</u>	<u>Standard</u>	
	<u>Tool Box</u>	<u>Tool Box</u>	
Key, socket head screw, hex drive, 1/2"	1	1	Federal Stock
Key, socket head screw, hex drive, 9/16"	1	1	Federal Stock
Key, socket head screw, hex drive, 5/8"	1	1	Federal Stock
Bar, pinch, 1/2" x 13-1/2"	1	1	Federal Stock
Bar, pinch, 3/4" x 24"	1		Federal Stock
Bar, pry, 17/32" x 16"	1	1	Federal Stock
Frame, hand hacksaw	1	1	Federal Stock
Blades, hand hacksaw, 18 teeth/in	12	12	Federal Stock
Blades, hand hacksaw, 24 teeth/in	12	12	Federal Stock
Blades, hand hacksaw, 32 teeth/in	12	12	Federal Stock
Scraper, carbon, flexible, 1" x 9"	1	1	Federal Stock
Knife, putty, 1-1/4" blade		1	Federal Stock
Knife, putty, 2" blade	1		Federal Stock
Pick-up tool, magnetic, large		1	Federal Stock
Pick-up tool, magnetic, pocket		1	Commercial
Wrench, open-end, fixed, (tappet) 7/16" x 1/2"		2	Federal Stock
Wrench, open-end, fixed, (tappet) 1/2" x 9/16"		2	Federal Stock
Wrench, open-end, fixed, (tappet) 5/8" x 11/16"		2	Federal Stock
Tape, measuring, 8'	1	1	Federal Stock

<u>Item</u>	<u>Quantity</u>		<u>Source</u>
	<u>Heavy Duty</u>	<u>Standard</u>	
	<u>Tool Box</u>	<u>Tool Box</u>	
Rule, steel, machinist, 6" long, 1/32" one side, 1/10" other side		1	Federal Stock
Gage, thickness, English system, 25-blade	1	1	Federal Stock
Gage, thickness, English system, 13-blade		1	Federal Stock
Gage, gap-setting, set of 8, angular wire	1	1	Federal Stock
Tool kit, automotive, electrical, ignition		1	Federal Stock
Tool kit, diesel injector repair	1		Federal Stock
Chisel, cold, hand, 1/4"		1	Federal Stock
Chisel, cold, hand, 5/16"		1	Federal Stock
Chisel, cold, hand, 3/8"		1	Federal Stock
Chisel, cold, hand, 7/16"	1	1	Federal Stock
Chisel, cold, hand, 1/2"	1	1	Federal Stock
Chisel, cold, hand, 5/8"	1	1	Federal Stock
Chisel, cold, hand, 3/4"	1	1	Federal Stock
Chisel, cold, hand, 7/8"	1		Federal Stock

Ventilation Equipment

Five 11-ft lengths, 2-1/2-inch flexible exhaust hose, 4 couplings and 1 adapter	4 sets	Commercial
500 cfm, 10-inch, 110 V exhaust fan with automatic shutter	2	Commercial

Appendix A

STANDARD SPECIFICATIONS

The standard specifications given in the following list or mentioned in the text shall govern in all cases where references to standard specifications are made. In case of difference between these standard specifications and this specification or its accompanying drawings, this specification or its accompanying drawings shall govern. Especial care shall be exercised to refer in requests for quotations, in orders, and in subcontracts to the standard specifications and to all modifications thereof.

Military

MIL-A-397B	Feb. 3, 1953	Adhesive, Room-Temperature and Intermediate-Temperature Setting Resin (Phenol, Resorcinol, and Melamine Base)
MIL-C-43006	Jan. 27, 1961	Cloth, Laminated, Vinyl-Nylon, High-Strength Flexible
MIL-T-704C	June 22, 1956	Treatment and Painting of Material
MIL-W-530B	Mar. 24, 1959	Webbing, Textile, Cotton, General Purpose, Natural or in Colors

Joint Army-Navy

JAN-C-496(1)	Mar. 11, 1952	Clips, End
JAN-E-480	July 24, 1957	Enamel, Baking Phenol- or Urea-Formaldehyde

NAVY/DOCKS

9Th	Sept. 1956	Electrical Apparatus, Distributing Systems, and Wiring
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Federal

T-R-605	Oct. 31, 1956	Rope, Manila and Sisal
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W-C-596	Aug. 19, 1959	Connector, Plug, Electrical; Connector, Receptacle, Elec- trical; Plate, Wall, Electrical
W-F-406a	June 9, 1960	Fittings for Electrical Cable and Flexible Metal Conduit
W-J-800a	Apr. 2, 1958	Junction Box; Extension, Junction Box; Cover, Junction Box, (Steel, Cadmium or Zinc-Coated)
W-P-131a(2)	Apr. 13, 1951	Panelboards; Equipped With Automatic Circuit-Breakers
W-S-610	Apr. 2, 1958	Splice, Conductor
FF-B-571a	Jan. 9, 1934	Bolts, Nuts, Studs, and Top Rivets (and Material for Same)
FF-H-116c	July 3, 1957	Hinges, Hardware, Builder's
FF-N-105	Oct. 6, 1952	Nails, Ware; and Staples
FF-P-386b	Mar. 21, 1951	Pins, Cotter (Split)
FF-S-111b	May 15, 1961	Screws, Wood
NN-P-530c	Nov. 2, 1961	Plywood, Flat Panel
QQ-P-416a	Dec. 11, 1956	Plating, Cadmium (Electro- Deposited)
QQ-S-633a	Nov. 6, 1957	Steel Bars, Carbon, Cold Finished and Hot Rolled (General Purpose)
QQ-S-640	Aug. 8, 1952	Steel; Carbon, Sheet and Strip
QQ-Z-325a	May 13, 1959	Zinc Coating: Electro-Deposited, Requirements for
TT-E-529a	Oct. 30, 1959	Enamel, Alkyd, Semi-Gloss
TT-P-636b	Feb. 23, 1954	Primer Coating, Synthetic, Wood and Ferrous Metal

WW-C-566a	Sep. 2, 1954	Conduit, Steel, Flexible
WW-C-581c(2)	Oct. 28, 1958	Conduit, Electrical, Steel, Rigid, Zinc-Coated
WW-N-351a	Mar. 13, 1956	Nipples, Pipe, Threaded

Federal Standards

FED-STD-595	Mar. 1, 1956	Colors
FED-STD-751	Aug. 14, 1959	Stitches, Seams and Stitchings

Non-Government

All of the following specifications shall be of latest date unless indicated otherwise:

American Society for Testing Materials

Douglas Fir Plywood Association

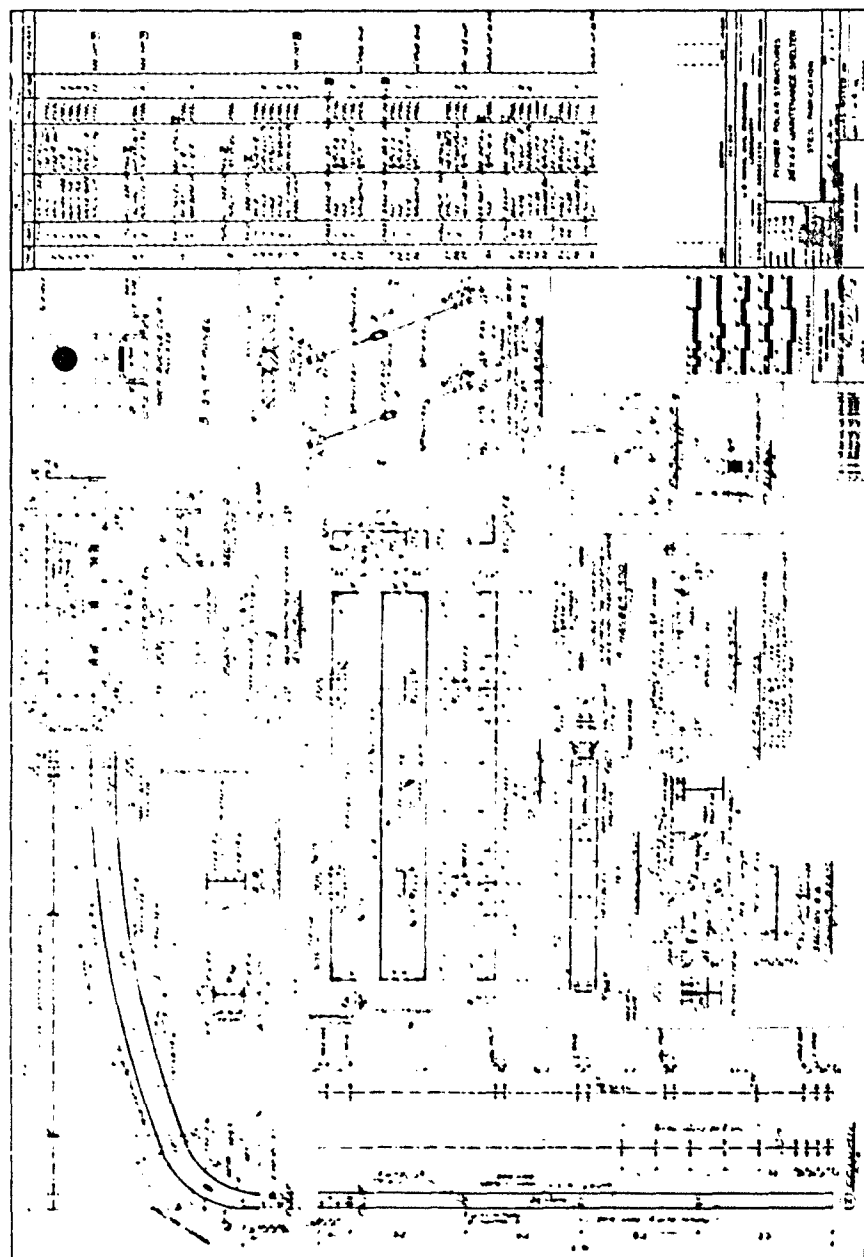
Commercial Standard CS-45

Appendix B

DRAWINGS FOR THE HEAVY-DUTY MAINTENANCE SHELTER

The original of the drawings listed below and shown at reduced scale are available at the Naval Civil Engineering Laboratory, Port Hueneme, California. All drawings are 28 by 40 inches.

<u>Y & D Drawing No.</u>	<u>Title</u>
936950	28- by 44-Foot Maintenance Shelter Steel Fabrication
936951	28- by 44-Foot Maintenance Shelter Floor, Side-Entry, Electrical
936952	28- by 44-Foot Maintenance Shelter Cover Details
936953	28- by 44-Foot Maintenance Shelter Erection



GENERAL INFORMATION		SPECIFICATIONS		TEST RESULTS		COMMENTS	
1	NAME OF STRUCTURE	2	DATE OF INSPECTION	3	TYPE OF DEFECT	4	REMARKS
5	LOCATION	6	INSPECTOR	7	DATE OF REPAIR	8	REPAIR METHOD
9	STRUCTURE NO.	10	INSPECTION NO.	11	REPAIR NO.	12	REPAIR DATE
13	STRUCTURE TYPE	14	STRUCTURE AGE	15	STRUCTURE CONDITION	16	STRUCTURE STATUS
17	STRUCTURE MATERIAL	18	STRUCTURE COLOR	19	STRUCTURE FINISH	20	STRUCTURE PAINT
21	STRUCTURE FOUNDATION	22	STRUCTURE ROOF	23	STRUCTURE WALLS	24	STRUCTURE FLOORS
25	STRUCTURE CEILING	26	STRUCTURE DOORS	27	STRUCTURE WINDOWS	28	STRUCTURE STAIRS
29	STRUCTURE ELEVATOR	30	STRUCTURE HALLWAYS	31	STRUCTURE BATHROOMS	32	STRUCTURE KITCHENS
33	STRUCTURE GARAGE	34	STRUCTURE PORCHES	35	STRUCTURE PATIOS	36	STRUCTURE DECKS
37	STRUCTURE FENCES	38	STRUCTURE GARDENS	39	STRUCTURE TREES	40	STRUCTURE SHRUBS
41	STRUCTURE LIGHTS	42	STRUCTURE SMOKE ALARMS	43	STRUCTURE FIRE EXTINGUISHERS	44	STRUCTURE SAFETY EQUIPMENT
45	STRUCTURE SECURITY SYSTEMS	46	STRUCTURE ACCESSIBILITY	47	STRUCTURE ENERGY EFFICIENCY	48	STRUCTURE ENVIRONMENTAL QUALITY
49	STRUCTURE HISTORICAL SIGNIFICANCE	50	STRUCTURE ARCHITECTURAL VALUE	51	STRUCTURE CULTURAL IMPORTANCE	52	STRUCTURE SOCIAL VALUE
53	STRUCTURE ECONOMIC VALUE	54	STRUCTURE ENVIRONMENTAL VALUE	55	STRUCTURE AESTHETIC VALUE	56	STRUCTURE FUNCTIONAL VALUE
57	STRUCTURE EDUCATIONAL VALUE	58	STRUCTURE RECREATIONAL VALUE	59	STRUCTURE HEALTH VALUE	60	STRUCTURE WELL-BEING VALUE
61	STRUCTURE COMMUNITY VALUE	62	STRUCTURE NATIONAL VALUE	63	STRUCTURE INTERNATIONAL VALUE	64	STRUCTURE GLOBAL VALUE
65	STRUCTURE FUTURE VALUE	66	STRUCTURE LEGACY VALUE	67	STRUCTURE HERITAGE VALUE	68	STRUCTURE IDENTITY VALUE
69	STRUCTURE BELONGING VALUE	70	STRUCTURE PURPOSE VALUE	71	STRUCTURE MEANING VALUE	72	STRUCTURE IMPACT VALUE
73	STRUCTURE INFLUENCE VALUE	74	STRUCTURE CONTRIBUTION VALUE	75	STRUCTURE SIGNIFICANCE VALUE	76	STRUCTURE IMPORTANCE VALUE
77	STRUCTURE RELEVANCE VALUE	78	STRUCTURE AUTHORITY VALUE	79	STRUCTURE CREDIBILITY VALUE	80	STRUCTURE TRUSTWORTHINESS VALUE
81	STRUCTURE RELIABILITY VALUE	82	STRUCTURE ACCURACY VALUE	83	STRUCTURE PRECISION VALUE	84	STRUCTURE CLARITY VALUE
85	STRUCTURE COHERENCE VALUE	86	STRUCTURE CONSISTENCY VALUE	87	STRUCTURE LOGIC VALUE	88	STRUCTURE REASON VALUE
89	STRUCTURE RATIONALE VALUE	90	STRUCTURE JUSTIFICATION VALUE	91	STRUCTURE DEFENSE VALUE	92	STRUCTURE SUPPORT VALUE
93	STRUCTURE PROOF VALUE	94	STRUCTURE EVIDENCE VALUE	95	STRUCTURE ARGUMENT VALUE	96	STRUCTURE CASE VALUE
97	STRUCTURE CLAIM VALUE	98	STRUCTURE ASSERTION VALUE	99	STRUCTURE STATEMENT VALUE	100	STRUCTURE DECLARATION VALUE

GENERAL INFORMATION		SPECIFICATIONS		TEST RESULTS		COMMENTS	
NO.	DESCRIPTION	UNIT	QUANTITY	TEST METHOD	TEST RESULT	REMARKS	DATE
1	Concrete	cu yd	100	ASTM C 138	125	OK	10/10/50
2	Reinforcing Steel	lb	5000	ASTM A 36	50	OK	10/10/50
3	Gravel	cu yd	200	ASTM C 59	120	OK	10/10/50
4	Sand	cu yd	100	ASTM C 144	110	OK	10/10/50
5	Water	gal	1000	ASTM D 155	100	OK	10/10/50
6	Cement	lb	1000	ASTM C 150	100	OK	10/10/50
7	Brick	sq ft	100	ASTM C 90	100	OK	10/10/50
8	Tile	sq ft	100	ASTM C 136	100	OK	10/10/50
9	Paint	gal	100	ASTM D 155	100	OK	10/10/50
10	Plaster	sq ft	100	ASTM C 136	100	OK	10/10/50
11	Insulation	sq ft	100	ASTM C 136	100	OK	10/10/50
12	Roofing	sq ft	100	ASTM C 136	100	OK	10/10/50
13	Foundation	sq ft	100	ASTM C 136	100	OK	10/10/50
14	Wall	sq ft	100	ASTM C 136	100	OK	10/10/50
15	Floor	sq ft	100	ASTM C 136	100	OK	10/10/50
16	Roof	sq ft	100	ASTM C 136	100	OK	10/10/50
17	Foundation	sq ft	100	ASTM C 136	100	OK	10/10/50
18	Wall	sq ft	100	ASTM C 136	100	OK	10/10/50
19	Floor	sq ft	100	ASTM C 136	100	OK	10/10/50
20	Roof	sq ft	100	ASTM C 136	100	OK	10/10/50

REMARKS: All materials tested and found to be in accordance with specifications.

DATE: 10/10/50

BY: [Signature]

<p>UNITED STATES DEPARTMENT OF JUSTICE FEDERAL BUREAU OF INVESTIGATION WASHINGTON, D. C. 20535</p>		<p>REPORT OF INVESTIGATION DATE: 10/10/68 BY: [illegible] TITLE: [illegible]</p>	
<p>1. SUMMARY OF FACTS:</p> <p>[illegible text]</p>		<p>2. ANALYSIS:</p> <p>[illegible text]</p>	
<p>3. CONCLUSIONS:</p> <p>[illegible text]</p>		<p>4. RECOMMENDATIONS:</p> <p>[illegible text]</p>	